

REMARKS

These remarks are in response to the Office Action dated May 5, 2003, which has a shortened statutory period for response set to expire August 5, 2003. A one-month extension, to expire September 5, 2003, is requested in a petition filed herewith.

Claims

Claims 1-24 are pending in the above-identified application. Claims 1-24 are rejected over prior art. Claims 3 and 21 are amended, and Claims 25-27 are added. Claims 1-2, and 4-20, and 22-24 remain as filed. Reconsideration is requested.

Rejections Under 35 U.S.C. § 103

Claims 1-24 are rejected under 35 U.S.C. § 103 as being unpatentable over Spring (US 6,480,347). The Examiner writes:

“Spring discloses a holding apparatus comprising: -a support [10] having a grip face [figure 1] including a plurality of magnet means [30A-30D] adapted to abut an prism carrier/optical device [22]; and – magnet means [28A-28D] mounted on the optical device to selectively magnetically engage the support.

Spring disclose the instant claimed invention except for the optical device being an imager.

It would have been obvious to one having ordinary skill in the art at the time the invention was made that the support design of Spring could have been used to support an optical imager in order to facilitate positioning and interchangeability thereof.”

Applicant respectfully traverses.

M.P.E.P. §2143 sets forth the requirements of a *prima facie* case of obviousness:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

Claim 1:

Claim 1 recites (in part): “a magnet disposed to selectively, magnetically engage said ferro-magnetic component of said imager.” (emphasis added) The cited reference does not teach or suggest this limitation of Claim 1. Rather, magnets 30 A-D of Spring are permanent magnets that are fixed in position and cannot be turned on or off. The only way to engage/disengage the magnets of the cited reference is to apply enough physical force to overpower the magnetic attraction.

The selective engagement feature of the present invention is important, because engaging/disengaging an imaging device simply by overpowering the magnetic attraction would likely result in deformation and/or misalignment of the imager. The importance of keeping the imager stress free during positioning is discussed in Applicant’s specification, for example, at Page 2, Lines 17-30.

Additionally, Applicant respectfully asserts that there is no suggestion or motivation in the prior art to modify the Spring reference to temporarily secure an imager. For example, as stated in Applicant’s specification, there are several requirements that should be met in order to optimally align an imager in a projection chassis (see Page 1, Line 18 - Page 2, Line 25). Most importantly, the imager must have six (6) degrees of freedom of adjustability after it is attached to a positioning apparatus. In the present invention, the holding apparatus is secured to a convergence apparatus 12 (FIG. 1) which is readily adjustable in 6 degrees of freedom. The holding apparatus of Spring, on the other hand, has only one (1) degree of freedom for positioning prism carrier 22, because prism carrier 22 can only rotate about hinge axis 26. Because the adjustment capabilities of the apparatus of Spring are not suited to the alignment of an imager, there would be no motivation to modify the device of spring to engage an imager. Applicant is aware that Claim 1 does not include limitations directed to any particular adjustment capabilities. However, the adjustment capabilities of the prior art devices are directly relevant to whether one skilled in the art would be motivated to combine the devices to obtain a holding apparatus for temporarily securing an imager.

Furthermore, modifying the magnet-to-magnet apparatus of Spring to hold an imager would require that additional parts (e.g., magnets) be incorporated into the projection chassis or the the alignment device retaining the imager and the imager itself. Adding such parts increases

the cost and complexity of the projection unit, and is therefore undesirable. Accordingly, there would be no motivation to do so.

Finally, Applicant respectfully points out that the Examiner has not provided a suggestion or motivation to modify the apparatus of Spring. The Examiner asserts only that it would have been obvious that "the support design of Spring could have been used to support an optical imager in order to facilitate positioning and interchangeability thereof." (emphasis added) No reason is provided as to why one skilled in the art would be motivated to do so.

For the above reasons, Applicant respectfully asserts that no prima facie case of obviousness is established with respect to Claim 1, and requests withdrawal of the rejection of Claim 1 under 35 U.S.C. § 103.

Claims 2-6 and 12-24:

Claims 2-6 and 12-24 are rejected under 35 U.S.C. § 103 as being unpatentable over Spring (US 6,480,347) in view of Stagnitto et al. (US 5,993,365). The Examiner writes:

"Spring disclose the instant claimed invention except for the selectivity of the magnetically engaging being controlled by movement of the magnet relative to a shunt path.

Stagnitto et al. discloses a tool attachment/detachment means using a permanent magnet [42] interacting with shunt blocks [16] to direct the magnetic flux and hold or release the tool attachment [claim 3, column 7 line 60-column 8 line 8] to pole support pieces [38].

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the permanent magnet/shunt attachment/detachment means in Spring, as suggested by Stagnitto et al., for the purpose of facilitating mounting of the optical device."

Applicant respectfully traverses.

Claims 2-6:

Initially, Applicant points out that Claims 2-6 depend either directly or indirectly from Claim 1, and are therefore distinguished from the cited prior art for at least the reasons provided above with respect to Claim 1.

Additionally, Claim 2 recites (in part): "a handle coupled to said magnet for rotating said magnet between an on position and an off position." Because the cited references when combined do not teach or suggest this limitation of Claim 2, no *prima facie* case of obviousness is established with respect to Claim 2. Claims 3-6 depend either directly or indirectly from Claim 2, and are therefore distinguishable from the cited prior art for at least the same reason. Further, Claims 3-6 each recites additional limitations that are not taught or suggested by the references.

Applicant also points out that there is no suggestion or motivation to combine the teachings of Spring and Stagnitto et al.. In particular, the principle of operation and intended result is different in each reference. In Spring, the magnets hold prism carrier 22 in a stationary position. In contrast, the apparatus of Stagnitto et al. magnetically engages a tool so that the tool can be manipulated, and provides a shunt path to reduce but not eliminate the attractive force between the tool adapter plate and the attachment block (see abstract). Indeed, it is unclear how or why these disparate inventions would be combined. For example, providing an alternate shunt path near magnets 30 A-D of Spring would simply frustrate the object of holding the prism assembly in place. Certainly, there is no suggestion in the prior art to combine these references.

For at least the foregoing reasons, Applicant respectfully requests reconsideration and withdrawal of the rejections of Claims 2-6 under 35 U.S.C. §103.

Claims 12-20:

Claim 12 recites:

12. A magnetic chuck for holding an imager, comprising:
a non ferromagnetic housing;
two ferromagnetic blocks affixed to said housing; and
a magnet rotatably affixed between said blocks such that a magnetic field can selectively be routed through said blocks or between said blocks. (emphasis added)

The cited references when combined do not teach or suggest all of the limitations of Claim 12. Therefore no *prima facie* case of obviousness is established with respect to Claim 12. In particular, the references do not teach "a magnet rotatably affixed between said blocks" for controlling the routing of a magnetic field. As stated by the Examiner, Spring does not disclose "magnetically engaging being controlled by movement of the magnet." Furthermore, the

Examiner does not assert that Stagnitto et al. discloses magnetic engagement being controlled by rotation of a magnet. Indeed, it appears that the magnets 42 of Stagnitto et al. reside in saddles 40 and do not move or rotate within attachment block 14. Rather, according to Stagnitto et al. magnetic flux is partially shunted when shunt blocks 16 engage slots 56 of side walls 38, and not shunted when shunt blocks 16 are removed (see abstract).

Applicant would also like to point out that there is no motivation or suggestion to combine Spring and Stagnitto et al. to produce the claimed invention. In fact, as indicated above, it is unclear how the apparatus of the cited reference could be combined to provide a holding apparatus for an imager. Further, there is no suggestion that the apparatus of Stagnitto et al., which is designed for manipulating industrial tools, would be appropriate for the fragile task of aligning imagers. As indicated in the abstract of Stagnitto et al., "there will remain enough residual force to keep the adapter plate from falling off of the attachment block in an uncontrolled manner." The adapter plate is then removed from the attachment block by the robotic arm pulling hard enough to overcome the residual force. Pulling an imager hard enough to overcome a residual force sufficient to retain a tool adapter plate would likely deform and/or damage the imager, or could pull the imager out of alignment.

For the above reasons, Applicant respectfully asserts that no prima facie case of obviousness is established with respect to Claim 12, and requests reconsideration and withdrawal of the rejection of Claim 12 under 35 U.S.C. §103. Claims 13-20 depend either directly or indirectly from Claim 12 and are distinguished from the cited prior art for at least the reasons provided above with respect to Claim 12.

Claims 21-22:

Claim 21 is amended herein for clarity, and now recites (in part): "means for selectively generating a magnetic field through said contact surface to attract said imager assembly to hold said imager assembly to said contact surface." This means-plus-function limitation, must be interpreted according to 35 U.S.C. § 112, Paragraph 6, which provides:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure,

material, or acts described in the specification and equivalents thereof.

Applicant respectfully asserts that nothing in the cited references can be fairly characterized as an equivalent to the means for selectively generating a magnetic field through said contact surface to attract and hold the imager assembly to the contact surface disclosed in Applicant's specification. For example, Applicant's specification discloses selectively routing a magnetic field through a grip face of a holding apparatus to magnetically mount an imager to the grip face. In contrast, Spring simply discloses coupling two sets of magnets together, and Stagnitto et al. discloses shunting magnetic flux by sliding shunt bars into slots of a tool adapter plate. Therefore, when properly interpreted according to 35 U.S.C. § 112, Paragraph 6, Claim 21 does not read on the structure of the cited references, and no prima facie case of obviousness is established with respect to Claim 21.

Claim 22 depends directly from Claim 21, and is therefore distinguished from the cited prior art for at least the same reasons as Claim 21. Further, Claim 22 recites "means for selectively directing said magnetic field through said shunt path." This means-plus-function limitation must also be interpreted according to 35 U.S.C. §112, sixth paragraph. Applicant respectfully asserts that nothing in either of the cited references can be fairly characterized as an equivalent of the means for selectively directing said magnetic field through said shunt path disclosed in applicants specification. Therefore, no prima facie case of obviousness is established with respect to Claim 22..

Claims 23-24:

Claims 23-24 disclose a method for mounting an imager assembly to another apparatus such as a projection chassis. As originally filed, Claim 23 recites:

23. A method for mounting an imager assembly to another apparatus, said method comprising:
magnetically **coupling said imager assembly** to a positioning device;
positioning said imager with respect to said other apparatus with said positioning device;
fixing said imager with respect to said other apparatus; and
disengaging said imager from said positioning device.
(emphasis added)

When combined, the cited references do not teach the step of "positioning said imager with respect to said other apparatus with said positioning device." As the Examiner indicates at Page 3, Line 3, Spring does not disclose the manipulation of an imager. Stagnitto et al. also does not disclose positioning an imager. Further, there is no suggestion in either reference that the devices disclosed therein would even be suitable for the positioning of an imager, which for the reasons provided above Applicant asserts they are not. Therefore, the references when combined do not teach or suggest all of the limitations of Claim 23, and no prima facie case of obviousness is established.

For the foregoing reasons, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claim 23 under 35 U.S.C. §103. Claim 24 depends directly from Claim 23 and therefore is distinguished over the prior art for at least the same reasons provided above with respect to Claim 23.

For the above reasons Applicant requests reconsideration and withdrawal of all the rejections under 35 U.S.C. § 103.

New Claims 25-27:

Claim 25-27 are added. Support for new Claim 25 can be found at least at Page 1, Lines 18-28 of Applicant's original specification. Support for new Claim 26 can be found at least at Page 7, Line 29 - Page 8, Line 2. Support for Claim 27 can be found in Applicant's specification at least in the view of Fig. 1. No new matter is added.

For the foregoing reasons, Applicant believes Claims 1-27 are now in condition for allowance. Should the Examiner undertake any action other than allowance of Claims 1-27, or if the Examiner has any questions or suggestions for expediting the prosecution of this application, the Examiner is requested to contact Applicant's attorney at (269) 279-8820.



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